

REMARKS

STATUS OF THE CLAIMS

Claims 1-26 are pending in the application.

Claims 4-7, and 20-26 are rejected under 35 USC 102(e) as being anticipated by McCormack et al. (US Patent No. 6,360,255).

Claims 1-3, and 8-19 are rejected under 35 USC 103(a) as being unpatentable over McCormack et al. (US Patent No. 6,360,255) in view of Blumenau et al. (US Patent No. 6,421,711).

Claims 7, 8 and 15-17 have been amended herein for clarity and to improve form. Thus, claims 1-26 remain pending for reconsideration, which is respectfully requested.

No new matter has been added in this Amendment.

REJECTION UNDER 35 U.S.C. §102

The independent claims are 1, 4-9, 15-17 and 20.

Claims 4-7, and 20-26 are rejected under 35 USC 102(e) as being anticipated by McCormack et al., US Patent No. 6,360,255 (hereinafter McCormack). McCormack is newly cited, and, thus, newly relied upon. Therefore, independent claims 4-7 and 20 are anticipatorily rejected over McCormack.

In the rejection of claim 20, the examiner relies upon McCormack, column 4, lines 55-66 and column 15, lines 24-42. McCormack at column 4, lines 55-66, discloses a network management server which "identifies and extracts device information from the network devices." Also, McCormack, column 15, lines 24-42, discusses in part: "integration of a network management system with an external network." However, McCormack, column 4, lines 47-49, limits the "network devices" managed by McCormack's network management server to "routers, switches, and other backbone devices that guide data communications among clients and servers." Therefore, McCormack discloses an automated method to update the firmware in routers and switches as suggested in McCormack, Abstract, and column 2, line 55 to column 3, line 30. Thus, McCormack fails to disclose or suggest claimed present invention's, "**storage area network** system" in which "**an integrated management mechanism**" is provided for

"integrating and controlling the storage area network by ... managing access relationships between host computers of the storage area network and storage devices of the storage area network" (e.g., independent claim 20).

Regarding independent claims 4-7, McCormack is also relied upon to anticipatorily reject these independent claims. However, McCormack fails to disclose any storage area network management functionality other than to store and load firmware updates on a recordable storage medium (see e.g. McCormack column 7, lines 18-26). Thus, McCormack fails to teach or suggest the claimed present invention's, ***"Host computers ... each of said host computers comprising: an integrated management mechanism integrating and managing the storage area network system, and establishing access information for the storage devices based on access management information transmitted to the storage devices from the integrated management mechanism"*** (e.g., independent claim 4).

In contrast to McCormack, the claimed present invention, as recited in independent claim 5, provides:

5. (PREVIOUSLY PRESENTED) ***Switches*** in a storage area network system including storage devices, host computers, and an integrated management mechanism integrating and managing the storage area network system, each of said switches comprising:

a region-setting mechanism carrying out region settings within the storage devices, based on region information concerning regions within the storage devices transmitted by the integrated management mechanisms, said switches interconnecting the storage devices and the host computers.

Regarding independent claim 6, the Examiner relies upon McCormack, column 15, lines 24-42, which discuss in part: "integration of a network management system with an external network." As discussed above, McCormack's network management system fails to teach or suggest any storage area network management capabilities and is limited to the management of routers and switches. Claim 6 provides, ***"[s]torage devices in a storage area network system including host computers and switches, and an integrated management mechanism integrating and managing the storage area network system, each of said storage devices comprising: a storage management mechanism establishing conditions of access restrictions***

for the storage device ***based on access restriction information transmitted by the integrated management mechanism***, said switches interconnecting the host computers and the storage devices."

Further in contrast to McCormack, the claimed present invention, as recited in independent claim 7, provides,

7. (CURRENTLY AMENDED) An apparatus provided in a storage area network including storage devices including storage management mechanisms, host computers including storage area network management mechanisms, and switches having a region setting mechanism and interconnecting the storage devices and the host computers, said apparatus comprising:

integrated management mechanisms integrating and managing the storage area network system, transmitting access management information to the storage devices and to the storage area network management mechanisms of the host computers, transmitting region information to a switch region-setting mechanism of a switch, and transmitting access restriction information concerning the host computers to the storage management mechanisms of the storage devices.

McCormack cannot anticipate the claimed present invention, because McCormack fails to disclose or suggest any ***storage area network management functionality*** other than to store and load firmware updates on a recordable storage medium in network devices and McCormack is limited to the management of routers and switches in a network (see e.g. McCormack column 7, lines 18-26).

Therefore, because McCormack fails to teach or suggest the features of the independent claims as discussed above, Applicant(s) respectfully submit that independent claims 4-7 and 20 patentably distinguish over the relied upon references. Dependent claims 21-26 depend from independent claim 20 and patentably distinguish over the prior art at least due to their dependencies from independent claim 20.

REJECTION UNDER 35 U.S.C. §103

Claims 1-3, and 8-19 are rejected under 35 USC 103(a) as being unpatentable over McCormack et al., US Patent No. 6,360,255 (hereinafter McCormack), in view of Blumenau et

al., US Patent No. 6,421,711 (hereinafter Blumenau) on page 5 of the Office Action. Blumenau is newly relied upon.

Independent claims 1, 8, 9, 15, 16 and 17 are rejected over McCormack and Blumenau. However, even if one combined the two references, the combined system would not achieve the claimed present invention as recited in independent claims 1, 8, 9, 15, 16 and 17, because both McCormack and Blumenau fail to teach or suggests the claimed present invention's elements of "***an integrated management mechanism***" (e.g., 1, 500 in FIGS. 1-3 of the present Application) to provide "***transmitting access management information*** to the storage devices and the storage area network management mechanisms of the host computers, ***transmitting region information*** to the region-setting mechanisms of the switches, and ***transmitting access limit information*** concerning the host computers to the storage management mechanisms of the storage devices" (e.g., claims 1, 8, 9, 15, 16 and 17).

Blumenau discloses providing a "storage controller" that has "at least one physical data port for connecting the storage controller into a data network for data transmission between the data storage and host processors in the data network. The storage controller is programmed to provide a plurality of virtual ports that are not physical ports in the data network but that appear to the host processors to be physical ports in the data network that provide access to the data storage and that are connected to the physical data port by a switch in the storage controller for routing storage access requests from the physical data port to the virtual ports" (column 2, lines 45-55). Therefore, Blumenau uses a storage controller to control access to the data storage using virtual ports (column 2, lines 42-67).

Furthermore, Blumenau, column 13, lines 23-27, provides, "Alternatively, a *system administrator* at a remote terminal or host could access the information in the volume access table **80** and volume lists **81** and down-load microcode via a modem or dedicated link or via the data network (**21** in FIG. 1) using an appropriate communications protocol such as the Simple Network Management Protocol (SNMP)" (see Blumenau, column 12 line 65 through column 13, line 27).

However, Blumenau's "storage controller" and description of "system administrator," fail to disclose or suggest the claimed present invention's "***an integrated management mechanism***" 1, 500 (see FIGS. 1-3 of the present Application), which performs, "***integrating***

and controlling the storage area network, said integrated management mechanism including access route information of the host computers and the storage devices and, based on said access route information, **transmitting access management information** to the storage devices and the storage area network management mechanisms of the host computers, **transmitting region information** to the region-setting mechanisms of the switches, and **transmitting access limit information** concerning the host computers to the storage management mechanisms of the storage devices (e.g., independent claim 1).

Therefore, even if one combined Blumenau and McCormack, the combination does not disclose or suggest the claimed present invention's "**integrated management mechanism**" 1, 500, as recited in independent claims 1, 4, 7, 8, 9, 15, 16, 17, and 20, as follows:

- 1) "**transmitting access management information** to the storage devices and to the storage area network management mechanisms of the host computers,"
- 2) "**transmitting region information** to a switch region-setting mechanism," and
- 3) "**transmitting access restriction information** concerning the host computers to the storage management mechanisms of the storage devices."

Further, for example, independent claims 5 and 6, recite a "switch" and a "storage device" provide control functions according to "**region setting information**" and "**access restriction information**" transmitted by an "**integrated management mechanism**" 1, 500 (FIGS. 1-3) of the present invention, respectively.

Some example benefits of the claimed present invention's "**integrated management mechanism**," as claimed in independent claims 1, 4-9, 15-17 and 20, are discussed in page 29 of the present Application and support for the claimed present invention can be found, for example, in FIGS. 1-3 including the "integrated management mechanism" implementations 1 and 500. See also, page 5, line 12 to page 9, line 4 of the present Application.

Therefore, because McCormack, Blumenau and any combination thereof fails to teach or suggest the features of the claimed present invention as discussed above, Applicants respectfully submit that independent claims 1, 4-9, 15-17 and 20 are patentably distinguishing over a combined system of McCormack and Blumenau. Dependent claims 2, 3, 10-14, 18 and

19 depend from independent claim 1, 9 and 17 respectively and patentably distinguish over the prior art at least due to their dependencies from the independent claims.

INDEPENDENT CLAIMS 1, 8, 9, 15, 16 AND 17

Additionally, McCormack and Blumenau fail to teach or suggest the claimed present invention's, "switches coupled to the host computers and to the storage devices, said switches interconnecting the host computers and the storage devices, ***each of the switches comprising a region-setting mechanism***" as disclosed, for example, in claim 1. The Office Action in page 6, item 14, relies upon McCormack, column 9, lines 47-49, which states in part: "Such browsers, such as Netscape® Navigator, generally display one or more navigation command buttons in a command ***region***." However, displayed buttons in a navigation bar of a web browser fails to disclose or suggest the claimed present invention's, "***switches comprising a region-setting mechanism***" as disclosed in claims 1, 8, 9, 15, 16 and 17.

CLAIMS 9-14 AND 17-19

Previous allowance of claims 9-14 and 17-19 appear to have been withdrawn. In contrast to the relied upon references, the independent claims 9 and 17 provide:

Claim 9 recites:

9. A storage area network system comprising:
 - computers comprising a storage area network management mechanism;
 - storage devices, each comprising a storage management mechanism;
 - switches interconnecting the computers and the storage devices, each of the switches comprising a region-setting mechanism; and
 - an integrated management device integrating and managing said storage area network, said integrated management device comprising access path information of the host computers and storage devices, said integrated management device transmitting access management information to the storage area network management mechanism of the host computers and to the storage devices, region information to the region setting mechanisms of the switches, and access restriction information about the host computer to the storage management mechanisms

of the storage devices, ***wherein the integrated management mechanism detecting whether fiber channel adapters mounted on the storage devices and the host computers, the host bus adapters mounted on the host computers, or the switches in said storage area network management system are replaced, obtaining settings information following the replacement from the storage area network management mechanism of the host computers, the switch region-setting mechanism, or the storage device storage management mechanism, and reconfiguring the access relationships to be equivalent to the access relationships prior to the replacement.***

Claim 17 recites:

17. A storage area network system comprising:
 - host computers;
 - storage devices, each comprising a storage management mechanism;
 - switches, each having a region setting mechanism,
 - interconnecting the host computers and the storage devices; and
 - an integrated management mechanism integrating and controlling the storage area network and comprising access path information of the host computers and storage devices and, using said access path information, the integrated management mechanism sends out access management information to the storage devices and the storage area network management mechanisms, region information to the switch-region-setting mechanisms of the switches, and access restriction information concerning the above host computers to the storage management mechanisms of the storage devices, ***wherein when a problem occurs in the storage area network system the integrated management mechanism receives problem information and, for a specified period of time, waits to see if there are other problem reports by checking problem reports received during the specified period and investigating relationship between the received problem reports and the problem report received first, and if the integrated management mechanism determines that the received problem reports and the problem report first received are related, the integrated management mechanism transmits a single report concerning one affected area according to a problem report method definition set up in advance in the integrated management mechanism.***

The Office Action in page 10, item 19, does not provide an express rejection rationale for previously allowed independent claims 9 and 17, even though these claims recite patentably distinguishing features of their own not recited in the other independent claims. Therefore, applicants respectfully submit independent claims 9 and 17 are in allowable condition over the relied upon references and should still be allowable.

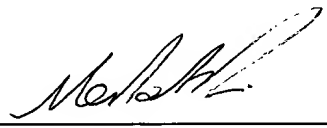
CONCLUSION

In view of the remarks, withdrawal of the rejections of pending claims and allowance of pending claims is respectfully requested.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

Respectfully submitted,
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